

cel



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,529	04/08/2004	Jonathan A. Nagel	1999-0793CON	8328
26652	7590	09/12/2005	EXAMINER	
AT&T CORP. P.O. BOX 4110 MIDDLETOWN, NJ 07748			PHAN, HANH	
			ART UNIT	PAPER NUMBER
			2638	
DATE MAILED: 09/12/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/820,529	Applicant(s) NAGEL, JONATHAN A.	
	Examiner Hanh Phan	Art Unit 2638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 10-22 and 26-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-22 and 26-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 04/22/2005.
2. In claim 2, line 7, the phrase "the optical compensator" should be changed to – the first optical compensator --.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6, 10-22 and 26-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson et al (US Patent No. 6,404,520) in view of Sun et al (Pub. No.: US 2002/0018267 A1).

Regarding claims 1 and 17, referring to Figure 3, Robinson teaches an optical communication system that compensates for polarization mode dispersion (PMD), comprising:

an optical source (i.e., optical source 24, Fig. 3) that transmits two or more optical signals having different optical frequency bands; and

a first optical compensator (i.e., optical compensator PMDC 32, Fig. 3) that receives the two or more optical signals (col. 4, lines 44-67, col. 5, lines 1-63 and col. 6, lines 28-50).

Robinson differs from claims 1 and 17 in that he fails to specifically teach rotating at least one polarization state of the two or more optical signals based on an error condition to compensate for PMD. However, Sun teaches rotating at least one polarization state of the two or more optical signals based on an error condition to compensate for PMD (Figures 1, 3A, 3B and 4-6 and see paragraphs [0045]-[0047] and paragraphs [0064]-[0075]). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the rotating at least one polarization state of the two or more optical signals based on an error condition to compensate for PMD as taught by Sun in the system of Robinson. One of ordinary skill in the art would have been motivated to do this since Sun suggests in paragraphs [0045]-[0047] and paragraphs [0064]-[0075] that using such the rotating at least one polarization state of the two or more optical signals based on an error condition have advantage of allowing compensating polarization mode dispersion of the signal and to reduce the signal error.

Regarding claims 2 and 18, the combination of Robinson and Sun teaches further comprising:

a first birefringent optical conduit that receives the rotated optical signals and disperses the rotated optical signals; and

an optical receiver that receives the dispersed optical signals, wherein the receiver measures the error condition of at least a first dispersed optical signal of the dispersed optical signals;

wherein the optical compensator adjusts the PMD of at least the first dispersed optical signal by changed the polarization state of rotation based on the error condition to compensate for PMD (see Fig. 3 of Robinson, col. 4, lines 44-67, col. 5, lines 1-63 and col. 6, lines 28-50 and Figs. 1, 3A, 3B and 4-6 of Sun, paragraphs [0045]-[0047] and paragraphs [0064]-[0075]).

Regarding claims 3, 4, 19 and 20, the combination of Robinson and Sun teaches wherein the error condition is based on a number of bit errors of the first received signal (see Fig. 3 of Robinson and Figs. 1, 3A, 3B and 4-6 of Sun).

Regarding claims 5 and 21, the combination of Robinson and Sun teaches wherein the error condition is based on PMD of the first received signal (see Fig. 3 of Robinson and Figs. 1, 3A, 3B and 4-6 of Sun).

Regarding claims 6 and 22, the combination of Robinson and Sun teaches wherein the first optical compensator is a single rotation device that rotates the polarization of each the two or more optical signals (see Figs. 1, 3A, 3B and 4-6 of Sun).

Regarding claims 10-16 and 26-32, the combination of Robinson and Sun teaches the first optical compensator is positioned at a location between the optical source and the optical receiver and defined by the ratio $L1/L2$ and wherein $L1/L2$ is less than approximately 1.5, and wherein $L1$ is the length of a first optical conduit between the optical compensator and optical source, and $L2$ is the length of the second optical conduit between the optical compensator and optical receiver (see col. 5 of Robinson, lines 19-26 and see Figs. 1, 3A, 3B and 4-6 of Sun).

Response to Arguments

5. Applicant's arguments with respect to claims 1-6, 10-22 and 26-32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye, can be reached on (571)272-3078. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.


HANH PHAN
PRIMARY EXAMINER